Shi Quan, FOO

● +852-6064 9248   ● sqfoo@connect.ust.hk

RESEARCH INTERESTS

Multimodal Deep Learning, Agentic Workflow, and Machine Learning

EDUCATION

Bachelor of Science with Major in Physics   09/2018 - 08/2022

The Hong Kong University of Science and Technology (HKUST), Hong Kong   GPA: 3.811/4.300

High School Graduate   01/2012 - 11/2017

Chong Hwa Independent High School, Kuala Lumpur, Malaysia

RESEARCH EXPERIENCE

Research Assistant | *Prof. Yeung Dit-Yan's Lab, HKUST*   08/2022 - Present

- Developed deep neural networks for quantitative precipitation estimation (QPE) using radar images and accumulated rainfall.
- Designed and implemented a Fourier-based loss function improving visual sharpness of deterministic models by 50%. This work was accepted at NeurIPS 2024.

Undergraduate Researcher | *Prof. Jo Gyu-Boong's Lab, HKUST*   02/2021 - 12/2021

- Utilized Digital Micro-Mirror Device (DMD) to manipulate the intensity and phase of light. Focused on software development and programming.

Undergraduate Researcher | *Prof. Du Shengwang's Lab, HKUST*   04/2019 - 06/2020

- Built PID control circuit for laser intensity stabilization using Arduino and DAC components.
- Simulated the relationship between dephasing rate, coupling frequency and bandwidth of Electromagnetically Induced Transparency (EIT).
- Operated Fabry-Pérot filter to allow the light with a specific range of wavelength transmit only. Gained hands-on experience operating optical instruments.

HONORS & AWARDS

Paul Ching Wu Chu Scholarship for Physics Students   2021-22

Physics Entry Scholarship   2019-22

HKSAR Government Scholarship Fund - Belt and Road Scholarship (Malaysia)   2018-22

Honorable Mention in 19th Asian Physics Olympiad   2018

PROFESSIONAL EXPERIENCE

Research Assistant | *HKUST, Hong Kong*   08/2022 - Present

- Conducted deep learning research for weather prediction models involving large-scale spatiotemporal datasets.

Summer Intern | *Hong Kong Observatory (HKO), Hong Kong*   06/2021 - 07/2021

- Applied analog methods using historical rainfall data to predict the heavy rainfall probability.

Data Entry Part Timer | *GFK Retail and Technology, Malaysia*   02/2018 - 06/2018

- Analyzed collected market data for consumer trends and marketing.

TECHNICAL SKILLS

Python, TensorFlow, PyTorch, Keras, NumPy, Scikit-learn, OpenCV

PUBLICATIONS

Foo, **Shi Quan**, Chi-Ho Wong, Zhihan Gao, Dit-Yan Yeung, Ka-Hing Wong, and Wai-Kin Wong. "STLDM: Spatio-Temporal Latent Diffusion Model for Precipitation Nowcasting." *Transactions on Machine Learning Research*, 2025. https://openreview.net/forum?id=f4oJwXn3qg.

Yan, Chiu-Wai, **Shi Quan Foo**, Van-Hoan Trinh, Dit-Yan Yeung, Ka-Hing Wong, and Wai-Kin Wong. "Fourier Amplitude and Correlation Loss: Beyond Using L2 loss for Skillful Precipitation Nowcasting." In *NeurIPS*. 2024.